

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

SATO et al.

Group Art Unit: Unknown

Application No.: New U.S. Patent Application

Examiner: Unknown

Filed: November 30, 2001

Attorney Dkt. No.: 108384-00034

For: RESIN COMPOUND FOR FABRICATING INTERLAYER DIELECTRIC OF
PRINTED WIRING BOARD, RESIN SHEET AND RESIN APPLIED-COPPER FOIL
FOR FORMING INSULATION LAYER USING THE RESIN COMPOUND, AND
COPPER-CLAD LAMINATE USING THEM

PRELIMINARY AMENDMENT

Commissioner for Patents
Washington, D.C. 20231

November 30, 2001

Sir:

Prior to initial examination of the application, please amend the above-identified application as follows:

IN THE CLAIMS:

Please amend claims 4, 5, 6, 7, 9 and 10 as follows:

4. (Amended) The resin compound used for fabricating the interlayer dielectric of the printed wiring board as set forth in Claim 2, wherein the polymers having crosslinkable functional groups within a molecule are any one or more of polyether sulfone resin having a hydroxyl group at a terminal, polyvinyl acetal resin having repeated hydroxyl groups within a molecule, and phenoxy resin.

after the composition is added to and dissolved in the solvent becomes 40 to 50% by weight.

9. (Amended) A resin sheet for forming an insulating layer used for manufacturing a copper-clad laminate, wherein the resin compound for fabricating the interlayer dielectric of the printed wiring board as set forth in Claim 1 is made into a sheet which is in a semi-cured state.

10. (Amended) A resin applied-copper foil constituted by forming a resin layer on a surface of copper foil employing the resin compound for fabricating the interlayer dielectric of the printed wiring board as set forth in Claim 1.

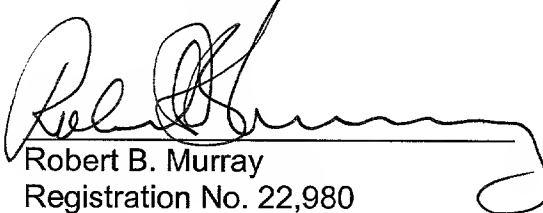
FIG. 10

REMARKS

Claims 1-12 are pending in this application. By this Amendment, claims 4, 5, 6, 7, 9 and 10 are amended. No new matter is contained in the amendments.

Please charge any fee deficiency or credit any overpayment to Deposit Account No. 01-2300.

Respectfully submitted,



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MARKED UP CLAIMS

4. The resin compound used for fabricating the interlayer dielectric of the printed wiring board as set forth in Claim[s] 2 [or 3], wherein the polymers having crosslinkable functional groups within a molecule are any one or more of polyether sulfone resin having a hydroxyl group at a terminal, polyvinyl acetal resin having repeated hydroxyl groups within a molecule, and phenoxy resin.

5. The resin compound used for fabricating the interlayer dielectric of the printed wiring board as set forth in [any of] Claim[s] 2 [to 4], wherein the phenol novolak epoxy resin curing agent containing triazine rings within a molecule comprises one or two of melamine and benzoguanamine and a compound obtained from a condensation reaction with phenols and formaldehydes and has 5 to 25% by weight of nitrogen content.

6. The resin compound used for fabricating the interlayer dielectric of the printed wiring board as set forth in [any of] Claim[s] 2 [to 5], wherein the maleimide compounds having thermosetting properties are any one or more of N,N'-(4,4-diphenylmethane)bismaleimide, bis(3-ethyl-5-methyl-4-maleimidephenyl)methane, 2,2-bis[4-(4-maleimidephenoxy)phenyl]propane, and thermosetting maleimide compounds obtained from Michael addition reaction of these maleimide compounds and polyamines.

7. A method for producing the resin compound used for fabricating the interlayer dielectric of the printed wiring board as set forth in [any of] Claim[s] 1 [to 6], wherein a composition is made to have 20 to 70 parts by weight of epoxy resins, 5 to 30 parts by weight of polymers having crosslinkable functional groups within a molecule, 10 to 50 parts by weight of maleimide compounds having thermosetting properties, and a balance being a crosslinker added as necessary and a phenol novolak epoxy resin curing agent containing triazine rings within a molecule given that a total amount of the resin compound excluding a solvent is 100 parts by weight, and that a solids content after the composition is added to and dissolved in the solvent becomes 40 to 50% by weight.

8. The method for producing the resin compound used for fabricating the interlayer dielectric of the printed wiring board as set forth in Claim 7, wherein the solvent is a mixed solvent of N-methylpyrrolidone and methyl ethyl ketone, the mixing ratio of N-methylpyrrolidone/methyl ethyl ketone being in a range of 50/50 to 40/60 (by weight).

9. A resin sheet for forming an insulating layer used for manufacturing a copper-clad laminate, wherein the resin compound for fabricating the interlayer dielectric of the printed wiring board as set forth in Claim[s] 1 [to 6] is made into a sheet which is in a semi-cured state.

10. A resin applied-copper foil constituted by forming a resin layer on a surface of copper foil employing the resin compound for fabricating the interlayer dielectric of the printed wiring board as set forth in any of Claim[s] 1 [to 6].

11. The copper-clad laminate manufactured by the use of the resin sheet for forming the insulating layer as set forth in Claim 9.

12. The copper-clad laminate manufactured by the use of the resin applied-copper foil as set forth in Claim 10.